

**AMENDMENTS TO THE CLAIMS**

Please insert new claims 80-85, as follows:

1. (Original) A method for generating one or more images, comprising:  
collecting data samples representative of a motion of an object;  
acquiring image data of at least a part of the object over a time interval;  
synchronizing the data samples and the image data to a common time base; and  
generating one or more images based on the synchronized image data.
2. (Original) The method of claim 1, wherein the collecting comprises performing a  
computed tomography procedure, an MRI procedure, or a PET procedure.
3. (Original) The method of claim 1, wherein the time interval comprises at least one  
physiological cyclic interval.
4. (Original) The method of claim 3, wherein the at least one physiological cyclic interval  
comprises one interval within a physiological breathing cycle.
5. (Original) The method of claim 1, wherein the generating comprises constructing a  
volumetric image.

6. (Original) The method of claim 1, wherein the generating comprises constructing a plurality of volumetric images.
7. (Original) The method of claim 6, wherein the plurality of volumetric images are displayed in sequence to form a video.
8. (Original) The method of claim 1, wherein the generating the one or more images is performed retrospectively.
9. (Original) The method of claim 1, further comprising identifying an interval of interest, wherein the generating the one or more images comprises constructing an image using image data associated with the interval of interest.
10. (Original) The method of claim 1, wherein the generating comprises using image data that are associated with a phase of the motion to generate an image.
11. (Original) The method of claim 1, wherein the generating comprises using image data that are associated with a first phase of the motion to generate a first image, and using image data that are associated with a second phase of the motion to generate a second image.
12. (Original) The method of claim 11, further comprising displaying the first and the second images in a sequence to form a video.

13. (Original) The method of claim 1, wherein the object comprises at least a portion of a patient.
14. (Original) The method of claim 1, wherein the object comprises at least a portion of a structure that is undergoing stress testing.
15. (Original) A system for generating one or more images, comprising:  
means for collecting data samples representative of a motion of an object;  
means for acquiring image data of at least a part of the object over a time interval;  
means for synchronizing the data samples and the image data to a common time base; and  
means for generating one or more images based on the synchronized image data.
16. (Original) The system of claim 15, wherein the means for generating is configured to construct an image using image data associated with an interval of interest.
17. (Original) The system of claim 15, wherein the means for generating is configured to generate an image using image data that are associated with a phase of the motion.
18. (Original) The system of claim 15, wherein the means for generating is configured to generate a first image using image data that are associated with a first phase of the motion, and a second image using image data that are associated with a second phase of the motion.

19. (Original) The system of claim 18, further comprising means for displaying the first and the second images in a sequence to form a video.
20. (Original) The system of claim 15, wherein the means for collecting comprises an optical device and a marker block.
21. (Original) The system of claim 15, wherein the means for acquiring is selected from the group consisting of a CT machine, a MRI machine, and a PET machine.
22. (Original) The system of claim 15, wherein the means for synchronizing and the means for generating comprises a processor.
23. (Original) A computer product having a set of stored instruction, the execution of which causes a process to be performed, the process comprising:
- collecting data samples representative of a motion of an object;
  - acquiring image data of at least a part of the object over a time interval;
  - synchronizing the data samples and the image data to a common time base; and
  - generating one or more images based on the synchronized image data.
24. (Original) The computer product of claim 23, wherein the generating comprises constructing a volumetric image.

25. (Original) The computer product of claim 23, wherein the generating comprises constructing a plurality of volumetric images.
26. (Original) The computer product of claim 25, wherein the plurality of volumetric images are displayed in sequence to form a video.
27. (Original) The computer product of claim 23, wherein the generating comprises using image data that are associated with a phase of the motion to generate an image.
28. (Original) The computer product of claim 23, wherein the generating comprises using image data that are associated with a first phase of the motion to generate a first image, and using image data that are associated with a second phase of the motion to generate a second image.
29. (Original) The computer product of claim 28, further comprising displaying the first and the second images in a sequence to form a video.
30. (Original) A method for generating one or more images, comprising:  
acquiring image data of at least a part of an object over a time interval;  
associating the image data with one or more phases of a motion cycle; and  
constructing one or more images using the image data that are associated with the respective one or more phases.

31. (Original) The method of claim 30, wherein the image data is associated with a plurality of phases of a motion cycle, and a plurality of images are constructed.

32. (Original) The method of claim 31, further comprising displaying the plurality of constructed images in a sequence to form a video.

33-49. (Canceled)

50. (Previously Presented) The method of claim 1, wherein the collecting comprises using an optical device.

51. (Previously Presented) The method of claim 50, wherein the optical device comprises a camera.

52. (Previously Presented) The method of claim 50, wherein the optical device comprises a fluoroscope.

53. (Previously Presented) The method of claim 30, wherein the constructing comprises using data collected from a computed tomography procedure.

54. (Previously Presented) The method of claim 30, wherein the constructing comprises using data collected from an MRI procedure.
55. (Previously Presented) The method of claim 30, wherein the constructing comprises generating one or more volumetric images.
56. (Previously Presented) A method for processing image data, comprising:  
acquiring image data of at least a part of an object over a time interval; and  
binning the image data based on a characteristic of a motion of the object.
57. (Previously Presented) The method of claim 56, wherein the characteristic of the motion comprises a portion of a cycle of the motion.
58. (Previously Presented) The method of claim 57, wherein the portion of a cycle of the motion is determined using a camera directed at the object.
59. (Previously Presented) The method of claim 56, wherein the characteristic of the motion comprises an amplitude of the motion.
60. (Previously Presented) The method of claim 56, further comprising sorting the image data based on a portion of a cycle of the motion of the object at which the image data are acquired.

61. (Previously Presented) The method of claim 56, wherein the acquiring comprises performing a computed tomography procedure.
62. (Previously Presented) The method of claim 56, wherein the acquiring comprises performing an MRI procedure.
63. (Previously Presented) The method of claim 56, wherein the acquiring comprises performing a PET procedure.
64. (Previously Presented) The method of claim 56, wherein the motion is associated with a breathing activity of a patient.
65. (Previously Presented) The method of claim 56, wherein the motion is associated with a cardiac activity of a patient.
66. (Previously Presented) The method of claim 56, further comprising generating one or more images using at least a portion of the binned image data.
67. (Previously Presented) The method of claim 66, wherein the generating comprises constructing one or more volumetric images.
- 68-74. (Canceled)



75. (Previously Presented) A method for collecting image data, comprising:  
acquiring image data of at least a part of an object over a time interval; and  
sorting the image data based on a portion of a cycle of a motion of the object at which the  
image data are acquired.

76-79. (Canceled)

80. (New) The method of claim 56, wherein the characteristic of the motion comprises one or  
more phases of the motion.

81. (New) The method of claim 80, wherein the image data is binned so that the image data  
correspond with the one or more phases of the motion, and wherein the method further comprises  
generating an image using the binned image data.

82. (New) The method of claim 75, wherein the image data is sorted so that the image data  
correspond with one or more phases of the motion, and wherein the method further comprises  
generating an image using the sorted image data.

83. (New) The method of claim 1, wherein the act of synchronizing results in the image data  
being associated with one or more phases of the motion.

84. (New) The system of claim 15, wherein the means for synchronizing the data samples and the image data causes the image data to be associated with one or more phases of the motion.

85. (New) The computer product of claim 23, wherein the act of synchronizing results in the image data being associated with one or more phases of the motion.